REMARKS/ARGUMENTS

The Office Action has been carefully considered. Claims 1-31 are pending. Claims 1, 9, 11, 19, 26, and 29 are currently amended. In the Office Action, the following issues were raised.

1. A corrected Figure 1 drawing was required;

2. Claims 1-4, 7-10, 12-15, and 19-31 were rejected as being unpatentable under 35 U.S.C. § 102(b) over Robinson's Technical Report, "SHORTEN: Simple lossless and near-lossless waveform compression" (hereinafter "*Robinson*");

3. Claims 5-6 were rejected as being unpatentable under 35 U.S.C. § 103(a) over *Robinson* in view of Hasegawa-Johnson et al.'s paper, "Speech coding: fundamentals and applications" December 2002 (hereinafter "*Johnson*");

4. Claim 11 was rejected as being unpatentable under 35 U.S.C. § 103(a) over *Robinson* in view of Published U.S. Patent Application Pub. No. 2002/0094535 to Nadon et al (hereinafter "*Nadon*");

5. Claims 16 and 18 were rejected as being unpatentable under 35 U.S.C. § 103(a) over *Robinson* in view of U.S. Patent No. 6,094,636 to Kim (hereinafter "*Kim*");

6. Claim 17 was rejected as being unpatentable under 35 U.S.C. § 103(a) over *Robinson* in view of U.S. Patent No. 3,694,813 to Loh (hereinafter "*Loh*").

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A corrected drawing is provided herein.

Rejections

In the Office Action, Claims 1-4, 7-10, 12-15, and 19-31 were rejected as being unpatentable under 35 U.S.C. § 102(b) over *Robinson*. Claims 5-6, 11, and 16-18 were rejected as being unpatentable under 35 U.S.C. § 103(a) over *Robinson* and *Johnson*, *Nadon*, *Kim*, or *Loh*. Although Applicant does not concede the propriety of the rejections in the Office Action, By current amendment, elements from Claim 9 ("determining a plurality of statistical measures") and Claim 11 (the statistical measures include "at least one of a skewness of the distribution, and a kurtosis of the distribution") have been incorporated into independent Claims 1, 19, 26, and 29. As amended Claims 1, 19, 26, and 29 contain subject matter that was addressed in separate sections of the Office Action, Applicant's comments below do not correspond exactly with the rejections made in the Office Action. Applicants respectfully submit that Claims 1-31, as presently amended, are in condition for allowance.

<u>*Robinson* does not teach determining a plurality of statistical measures.</u>

Claim 1, as currently amended, reads as follows:

A method comprising:
    applying a prediction filter to a unit of audio signal data;
    determining a distribution substantially representative of residual data generated as part of said applying of a prediction filter to the unit of audio signal data, wherein determining a distribution comprises **determining a plurality of statistical measures, including at least one of a skewness of the distribution, and a kurtosis of the distribution**; and
    transmitting in substance the unit of audio signal data to a recipient, utilizing the determined distribution to assist in reducing the amount of data having to be transmitted.

In the Office Action, Claim 11 was rejected under 35 U.S.C. § 103(a) as being obvious considering *Robinson* in view of *Nadon*. Accordingly, *Nadon* is addressed in this section, following a discussion of *Robinson*.

Robinson describes a computer program that performs compression of waveform files such as audio data. A simple predictive model of the waveform is used, followed by Huffman coding of the prediction residuals. In the Office Action, *Robinson* is said to disclose, *inter alia*, "determining a plurality of statistical measures of the subblock of the residual data," as claimed in amended Claim 1. In support of this assertion, the Office Action refers to *Robinson* fig. 2, reproduced below, stating "prediction residual is modeled by a Gaussian function, **which is characterized by mean and variance**." However, as explained below, *Robinson* does not disclose what is claimed in amended Claim 1, namely that determining a distribution of a subblock of residual data comprises a step of explicitly "**determining** a plurality of statistical measures, **including at least one of a skewness of the distribution, and a kurtosis of the distribution**."

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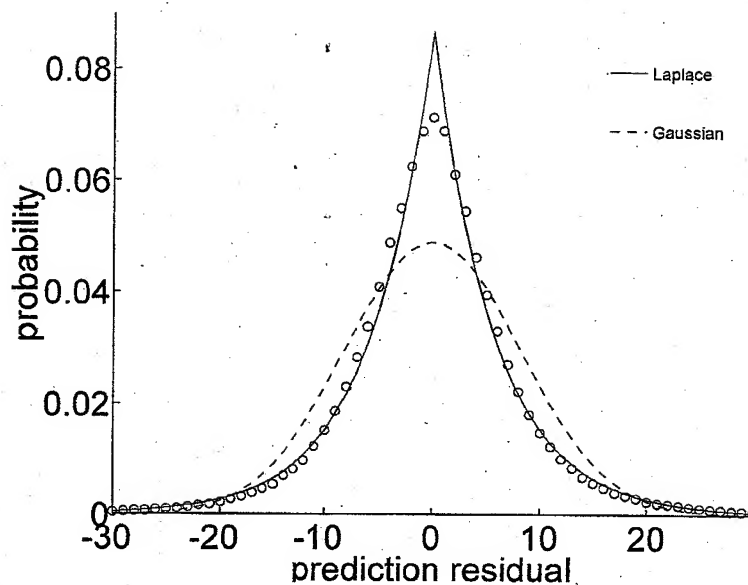AND APPARATUS

Figure 2: Observed, Gaussian and quantized Laplacian p.d.f.

Robinson discloses merely one specific method of losslessly encoding audio data, a method that does not utilize any statistical measures of a subblock of residual data, as does the method claimed in Claim 1. As explained in *Robinson* at 4-5 (§ 3.3), "[t]he problem of residual coding is therefore to find an appropriate form for the probability density function (p.d.f.) of the distribution of residual values so that they can be efficiently modelled. .... These figures demonstrate that the Laplacian p.d.f. fits the observed distribution very well." *Robinson* goes on to describe a process of Huffman-coding the residual modeled by the Laplacian p.d.f. *Robinson* discloses no other steps or processes to be applied to the residual data.

Thus, *Robinson* discloses merely a basic lossless audio encoder that does not utilize as part of the residual encoding process the novel step of "**determining** a plurality of statistical measures, including at least one of a skewness of the distribution, and a kurtosis of the distribution," as claimed in Claim 1. Indeed, *Robinson* discloses absolutely nothing about a need or utility of determining any of the enumerated statistical measures. The Office Action appears to admit as much, stating at 15 that *Robinson*'s Gaussian function "**inherently** has mean and variance values."

Thus, the Office Action asserts *Robinson* discloses **determining** various statistical measures merely by virtue of the fact that a Gaussian function is "characterized by mean and variance." However, as discussed above, *Robinson* does not disclose anything related to a mean

or a variance of a Gaussian function, let alone "**determining** a plurality of statistical measures," including at least two of the enumerated statistical measures, as claimed in Claim 1. Rather, *Robinson* discloses merely that a probability density function is first found and then encoded. The method claimed in Claim 1, however, goes well beyond what is disclosed in *Robinson*, taking a further step of determining a plurality of enumerated statistical measures. No matter how broadly *Robinson* is construed, *Robinson* cannot be reasonably read to disclose such a determining step.

Accordingly, *Robinson* cannot be said to anticipate this element of Claim 1, and Applicant respectfully submits that Claim 1 is in condition for allowance. Independent Claims 19, 26, and 29 recite similar elements and are allowable by similar reasoning.

One of ordinary skill in the art would have had no motivation to combine *Robinson* with *Nadon*.

As currently amended, Claim 1 also includes an element formerly present in Claim 11 (the statistical measures include "at least one of a skewness of the distribution, and a kurtosis of the distribution"), which was rejected under 35 U.S.C. § 103(a) as obvious considering *Robinson* in light of *Nadon*. However, as discussed below, *Robinson* in light of *Nadon* does not render amended Claim 1 obvious at least because one of ordinary skill in the art would have had no motivation to make the asserted combination.

In its rejection of pre-amendment Claim 11, the Office Action asserts that it would have been obvious to determine a skewness and a kurtosis of a distribution when *Robinson* is considered in light of *Nadon*. However, as discussed below, one of ordinary skill in the art would have had no motivation whatsoever to combine *Robinson* and *Nadon* in the manner suggested by the Office Action at least because *Nadon* is not analogous art.

In *Nadon*, the application is said to relate to, "a process for making evaluations which objectify analyses of **data obtained from hybridization arrays**. The present invention in one aspect is a process for removing **systematic error present in replicate genomic samples**." *Nadon* Field of the Invention. *Nadon* goes on to describe the subject matter towards which it is directed by "Array-based genetic analyses start with a large library of cDNAs or oligonucleotides (probes), immobilized on a substrate. The probes are hybridized with a single labeled sequence, or a labeled complex mixture derived from a tissue or cell line messenger RNA (target)." Col. 1 lines 27-30.

The Office Action treats *Nadon*, which is directed towards removing errors in replicate genomic samples, as analogous art to claims that are directed towards compressing audio data for

transmission, such as amended Claim 1. However, at least for the reasons discussed below, *Nadon* should not properly be considered analogous art.

Initially, Applicant respectfully submits that one of ordinary skill in the art who is considering the problem of compressing audio for transmission (as in amended Claim 1) would be completely unaware of references from genomics, a **completely unrelated** field of endeavor. Therefore, one of ordinary skill in the art of audio compression could not possibly have had a motivation to make the asserted combination.

Moreover, Applicant respectfully submits that amended Claim 1 is not obvious in light of the cited references because the subject matter of amended Claim 1 has an entirely different essential function or utility from the subject matter of *Nadon*.

According to MPEP 904.01(c), "The determination of what arts are analogous to a particular claimed invention… depends upon the **necessary essential function or utility of the subject matter** covered by the claims…." Two examples are given: "a tea **mixer** and a concrete **mixer** may both be regarded as relating to the **mixing** art, this being the necessary function of each. Similarly a brick-**cutting** machine and a biscuit **cutting** machine may be considered as having the same necessary function."

According to the essential function test mandated by the MPEP, *Nadon* is not analogous art to amended Claim 1 because *Nadon*'s necessary function is detecting and removing errors from genomic samples. In other words, *Nadon* begins with a set of data that contains errors, and its essential function is removing those errors. By contrast, the necessary function of amended Claim 1 is compressing audio signal data for transmission, not removing errors. Indeed, the fundamental point to audio compression is inherently minimize the data that needs to be transmitted so that a set of audio signal data can be recreated, wherein the re-created signal **preserves salient characteristics the original**. In other words, the necessary function of an audio compressor, such as that claimed in amended Claim 1, is to preserve data, not to discard errors, as in *Nadon*. Accordingly, Applicant respectfully submits that *Nadon* cannot properly be considered analogous prior art. As a result, Applicant respectfully submits that amended Claim 1 cannot be said to be obvious considering *Robinson* in view of *Nadon* at least because one of ordinary skill in the art would have had no motivation to make the asserted combination.

Combining *Robinson* with *Nadon* requires impermissible hindsight reasoning.

Applicants respectfully submit that the only way to assert that the pending claims are obvious would be to "engage in a hindsight reconstruction of the claimed invention, using the

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applicant's structure as a template and selecting elements from references to fill the gaps." *See In re Gorman*, 993 F.2d 982, 18 U.S.P.Q.2d 1885 (1991). Indeed, it is at least conceivable that the prior art may disclose broad teachings generally similar to some of the specific individual elements of the pending claims. Nonetheless, it remains strictly forbidden to "use hindsight reconstruction to pick and choose among isolated disclosures in the prior art" to determine that the pending claims are obvious. *See Ecolochem, Inc. v. Southern California Edison Co.*, 227 F.3d 1361, 56 U.S.P.Q.2d 1065 (2000). As stated in MPEP § 2141.01, "It is difficult but necessary that the decisionmaker forget what he or she has been taught . . . about the claimed invention and cast the mind back to the time the invention was made (often as here many years), to occupy the mind of one skilled in the art."

Under the Supreme Court's most recent ruling on the matter, it remains important to avoid the use of hindsight reasoning when combining references. *See KSR International Co. v. Teleflex Inc.*, 550 U.S. –, 127 S.Ct. 1727, 1742; *see also Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 36, 86 S.Ct. 684 (warning against a "temptation to read into the prior art the teachings of the invention in issue" and instructing courts to "guard against slipping into the use of hindsight").

Applicants respectfully submit that only the blueprint provided by Applicants' claims can provide any plausible motivation to pick and choose from completely unrelated references such as *Robinson* and *Nadon* in the manner asserted in the Office Action. As such hindsight reconstruction is inappropriate, Applicants respectfully submit that for this additional reason, the Office Action has failed to state a *prima facie* case of obviousness for Claim 1.

Claims 2-31 are allowable by similar reasoning and/or by dependency.

Independent Claims 19, 26, and 29 recite similar elements and are allowable by similar reasoning to that of Claim 1. Claims 2-18, 20-25, 27-28, and 30-31 are allowable at least by dependency. In addition, Claims 2-18, 20-25, 27-28, and 30-31 recite additional patentably distinct elements. For example, *Robinson* does not disclose "the determining of the statistical measures further comprises determining a mean of the residual samples; and the forming of the residual data distribution descriptor is further based on the determined mean of the residual samples," as claimed in Claim 10. In rejecting Claim 10, the Office Action relied on *Robinson's* disclosure that a residual may be modeled by a Gaussian distribution function. However, *Robinson* never discloses the active step of "**determining** a mean of the residual samples," let alone "forming [] the residual data distribution descriptor... based on the determined mean of the

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residual samples," as claimed in Claim 10. Accordingly, Applicants respectfully submit that the OA has not stated a *prima facie* case that Claim 10 is anticipated by *Robinson*.

Similarly, *Robinson* in view of *Nadon* never discloses or even suggests that "the forming of the residual data distribution descriptor is further based on the determined at least selected one of the skewness and the kurtosis of the residual samples," as claimed in Claim 11.

Moreover, *Robinson* does not disclose a "computation unit... adapted to **compute at least a plurality of statistical measures** for the residual data generated by the prediction filter," as claimed in Claim 22. As discussed above, the mere fact that *Robinson* discloses that a residual may be modeled by a Gaussian distribution function does not disclose the active steps performed on the residual, as claimed in Claim 22. Applicants are unable to discern how *Robinson* can be said to anticipate a "computation unit... adapted to **compute at least a plurality of statistical measures**," when *Robinson* never even mentions the possibility of performing any operations on the Gaussian distribution function.

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CONCLUSION

For at least the reasons above, Applicants respectfully submit that Claims 1-31 are allowable and request that the Examiner permit these claims to proceed to issuance. Although additional arguments are believed to exist for distinguishing the cited documents, the arguments presented are believed sufficient to address the Examiner's rejections. Likewise, failure of the Applicants to respond to a position taken by the Examiner is not an indication of acceptance or acquiescence of the Examiner's position. Instead, it is believed that the Examiner's positions are rendered moot by the foregoing arguments, and it is therefore not believed necessary to respond to every position taken by the Examiner with which Applicants do not agree.

The Examiner is respectfully requested to contact the undersigned at the telephone number below if there are any remaining questions regarding this application.

We believe the appropriate fees accompany this transmission. If, however, insufficient fee payment or fee overpayment occurs, the amount may be withdrawn or deposited from/to AXIOS Law Group's deposit account. The deposit account number is 50-4051.

Respectfully submitted,

AXIOS LAW GROUP

Date: August 18, 2008

by: /Adam L.K. Philipp/

Adam L.K. Philipp
Direct: 206.217.2226
E-mail: adam@axioslaw.com
Reg. No.: 42,071

AXIOS Law Group
1525 4th Avenue, Suite 800
Seattle, WA 98101
Telephone: 206-217-2200
Customer No.: 61,857